CLAIMS

What is claimed is:

1.   In a PDSN, a method of releasing resources, comprising:

sending an access request message to a first AAA server for authentication of

5   a node;

receiving an access accept message from the first AAA server;

establishing a Mobile IP session as a Foreign Agent for the node when an

access accept message is received from the first AAA server;

storing information associated with the node in resources associated with the

10   PDSN;

receiving a disconnect request message; and

releasing the resources when the disconnect request message is received.

2.   The method as recited in claim 1, wherein the disconnect request message is

15   received from the first AAA server.

3.   The method as recited in claim 1, wherein the disconnect request message is

received from a second AAA server via the first AAA server.

20   4.   The method as recited in claim 1, wherein the resources comprise memory and

the information comprises PPP information associated with a PPP session.

5.   The method as recited in claim 1, wherein the resources comprise memory and

the information is associated with the Mobile IP session.

6.   The method as recited in claim 3, wherein the first AAA server is the second AAA server.

7.   The method as recited in claim 3, wherein the first AAA server is a visited

5   AAA server associated with a foreign network and the second AAA server is a home AAA server associated with a home network of the node.

8.   The method as recited in claim 3, wherein the first AAA server is a visited AAA server associated with a foreign network and the second AAA server is the

10   visited AAA server associated with the foreign network.

9.   The method as recited in claim 3, wherein the access request message and access reply message are RADIUS messages, and the first and second AAA servers are RADIUS servers.

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10.   The method as recited in claim 1, wherein the disconnect request message comprises a source PDSN identifier identifying the PDSN, a username identifier identifying a user associated with the Mobile IP session, and a session identifier identifying a session associated with the user to be terminated by the PDSN.

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11.   The method as recited in claim 10, wherein the session is a PPP session.

12.   The method as recited in claim 3, wherein the disconnect request message is triggered by a second access request message sent to the second AAA server by a

25   second PDSN to which the node has roamed.

13.   The method as recited in claim 12, wherein the disconnect request message is sent after an access accept message is sent by the second AAA server to the first AAA server.

5   14.   The method as recited in claim 12, wherein the access request message and the second access request message each comprise a RADIUS access request message including a username identifier identifying a user associated with the Mobile IP session, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the PDSN.

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15.   The method as recited in claim 1, further comprising:
        sending a disconnect acknowledgement message indicating that the PDSN has successfully disconnected the user.

15   16.   The method as recited in claim 15, wherein the disconnect acknowledgement message is sent to the first AAA server.

17.   The method as recited in claim 3, further comprising:
        sending a disconnect acknowledgement message to the second AAA server,

20   the disconnect acknowledgement message indicating that the PDSN has successfully disconnected the user.

18.   The method as recited in claim 1, further comprising:
        sending a disconnect non-acknowledgement message indicating that the PDSN

25   is unable to disconnect the user.

19.   The method as recited in claim 18, wherein the disconnect non-acknowledgement message is sent to the first AAA server.

20.   The method as recited in claim 3, further comprising:

5   sending a disconnect non-acknowledgement message to the second AAA server, the disconnect non-acknowledgement message indicating that the PDSN is unable to disconnect the user.

21.   In a AAA server, a method of initiating the release of resources in a first

10 PDSN, comprising:

receiving an access request message from a second PDSN, the access request message including a username identifier identifying a user, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN;

15   sending an access accept message to the second PDSN in response to the access request message; and

sending a disconnect request message to the first PDSN indicating a request to release resources associated with the session.

20 22.   The method as recited in claim 21, wherein the disconnect request message further indicates that the resources associated with the session are no longer needed.

23.   The method as recited in claim 21, wherein the disconnect request message further indicates that a node associated with the user has moved.

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24.   The method as recited in claim 23, wherein the node is a mobile node.

25.   The method as recited in claim 21, wherein the disconnect request message

requests that the first PDSN disconnect the user for the session identified by the

5   session identifier.

26.   The method as recited in claim 21, wherein the AAA server is a home AAA

server associated with a home network of the user.

10   27.   The method as recited in claim 21, wherein the disconnect request message

comprises a source PDSN identifier identifying the first PDSN, a username identifier

identifying a user associated with the Mobile IP session, and a session identifier

identifying a session associated with the user to be terminated by the first PDSN.

15   28.   The method as recited in claim 27, wherein the session is a PPP session.

29.   The method as recited in claim 27, further comprising:

receiving a disconnect acknowledgement message from the first PDSN

indicating that the first PDSN has successfully disconnected the user.

20   30.   The method as recited in claim 27, further comprising:

receiving a disconnect non-acknowledgement message from the first PDSN

indicating that the first PDSN is unable to disconnect the user.

31.   In a first AAA server, a method of initiating the release of resources in a first

25   PDSN, comprising:

receiving an access accept message from a second AAA server, the access

accept message including a username identifier identifying a user, a session identifier

identifying a session associated with the user, and a PDSN identifier identifying the

first PDSN; and

5   sending a disconnect request message to the PDSN identifier identifying the

first PDSN, the disconnect request message indicating a request to release resources

associated with the session.

32.   The method as recited in claim 31, wherein the disconnect request message

10   further indicates that the resources associated with the session are no longer needed.

33.   The method as recited in claim 31, wherein the disconnect request message

further indicates that a node associated with the user has moved.

15   34.   The method as recited in claim 33, wherein the node is a mobile node.

35.   The method as recited in claim 31, wherein the disconnect request message

requests that the first PDSN disconnect the user for the session identified by the

session identifier.

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36.   The method as recited in claim 31, wherein the second AAA server is a home

AAA server associated with a home network of the user, and the first AAA server is a

visited AAA server associated with a foreign network.

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37.   The method as recited in claim 31, wherein the disconnect request message comprises a source PDSN identifier identifying the first PDSN, a username identifier identifying a user associated with the Mobile IP session, and a session identifier identifying a session associated with the user to be terminated by the first PDSN.

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38.   The method as recited in claim 37, wherein the session is a PPP session.

39.   The method as recited in claim 37, further comprising:

        receiving a disconnect acknowledgement message from the first PDSN

10   indicating that the first PDSN has successfully disconnected the user.

40.   The method as recited in claim 37, further comprising:

        receiving a disconnect non-acknowledgement message from the first PDSN

        indicating that the first PDSN is unable to disconnect the user.

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41.   The method as recited in claim 31, wherein the disconnect request message is sent when the access accept message is received by the first AAA server.

42.   A computer-readable medium storing thereon computer-readable instructions

20   for releasing resources in a PDSN, comprising:

        computer-readable instructions for sending an access request message to a first

AAA server for authentication of a node;

        computer-readable instructions for receiving an access accept message from

the first AAA server;

25   computer-readable instructions for establishing a Mobile IP session as a

Foreign Agent for the node when an access accept message is received from the first AAA server;

    computer-readable instructions for storing information associated with the node in resources associated with the PDSN;

5   computer-readable instructions for receiving a disconnect request message; and

    computer-readable instructions for releasing the resources when the disconnect request message is received.

10   43.   A PDSN adapted for releasing resources, comprising:

    means for sending an access request message to a first AAA server for authentication of a node;

    means for receiving an access accept message from the first AAA server;

    means for establishing a Mobile IP session as a Foreign Agent for the node

15   when an access accept message is received from the first AAA server;

    means for storing information associated with the node in resources associated with the PDSN;

    means for receiving a disconnect request message; and

    means for releasing the resources when the disconnect request message is

20   received.

   44.   A PDSN adapted for releasing resources, comprising:

    a processor; and

    a memory, at least one of the processor and the memory being adapted for:

25   sending an access request message to a first AAA server for authentication of

a node;

receiving an access accept message from the first AAA server;

establishing a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server;

5 storing information associated with the node in resources associated with the PDSN;

receiving a disconnect request message; and

releasing the resources when the disconnect request message is received.

10 45. A computer-readable medium storing thereon computer-readable instructions for initiating the release of resources in a first PDSN at a AAA server, comprising:

instructions for receiving an access request message from a second PDSN, the access request message including a username identifier identifying a user, a session identifier identifying a session associated with the user, and a PDSN identifier

15 identifying the first PDSN;

instructions for sending an access accept message to the second PDSN in response to the access request message; and

instructions for sending a disconnect request message to the first PDSN indicating a request to release resources associated with the session.

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46. A AAA server adapted for initiating the release of resources in a first PDSN, comprising:

a processor; and

a memory, at least one of the processor and the memory being adapted for:

25 receiving an access request message from a second PDSN, the access request

message including a username identifier identifying a user, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN;

     sending an access accept message to the second PDSN in response to the

5   access request message; and

     sending a disconnect request message to the first PDSN indicating a request to release resources associated with the session.

    47.   A computer-readable medium storing thereon computer-readable instructions

10   for initiating the release of resources in a first PDSN at a AAA server, comprising:

     instructions for receiving an access accept message from a second AAA server, the access accept message including a username identifier identifying a user, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN; and

15   instructions for sending a disconnect request message to the PDSN identifier identifying the first PDSN, the disconnect request message indicating a request to release resources associated with the session.

    48.   A AAA server adapted for initiating the release of resources in a first PDSN,

20   comprising:

     a processor; and

     a memory, at least one of the processor and the memory being adapted for:

     receiving an access accept message from a second AAA server, the access accept message including a username identifier identifying a user, a session identifier

25   identifying a session associated with the user, and a PDSN identifier identifying the

first PDSN; and

sending a disconnect request message to the PDSN identifier identifying the
first PDSN, the disconnect request message indicating a request to release resources
associated with the session.

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